Supporting Information

A Field Procedure to Screen Soil for Hazardous Lead

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Pages: 5

Figures: 4

Tables: 1

Table of Contents:

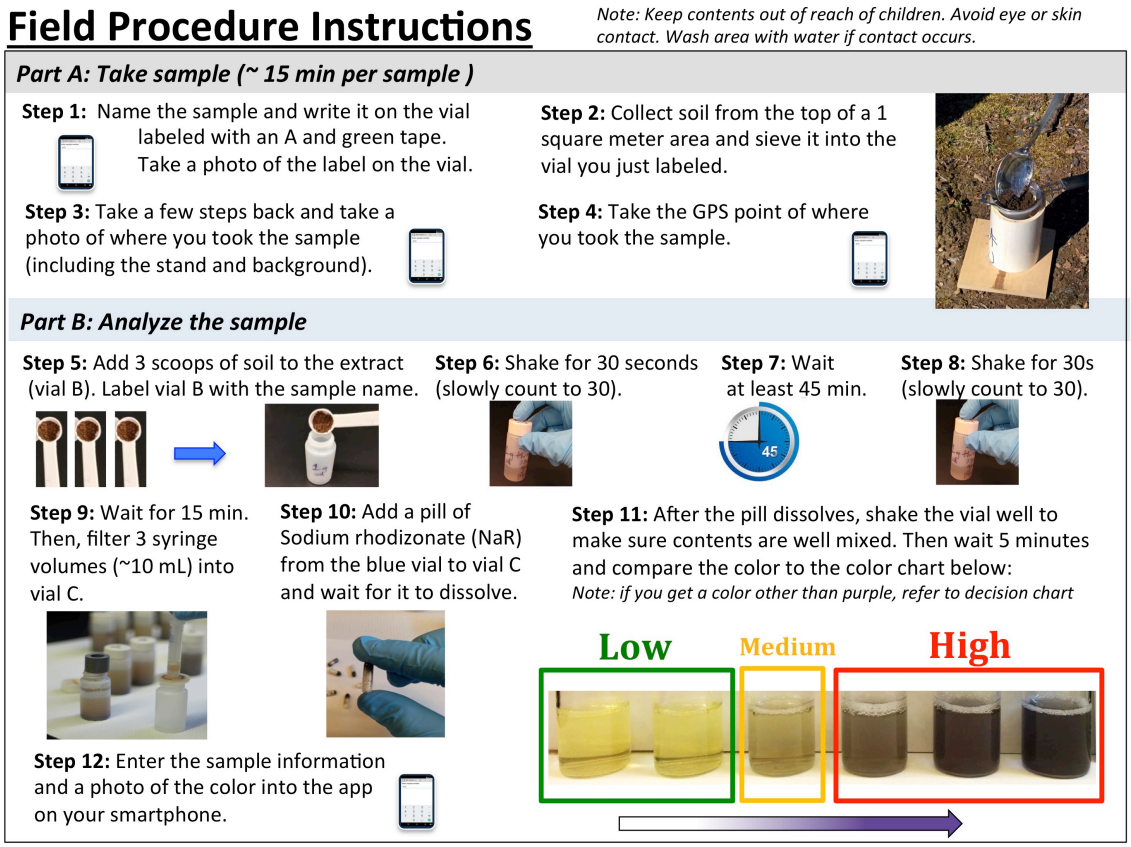

Figure S1: Field-procedure instruction sheet with color guide as provided to people using the procedure in the current form in pilot studies

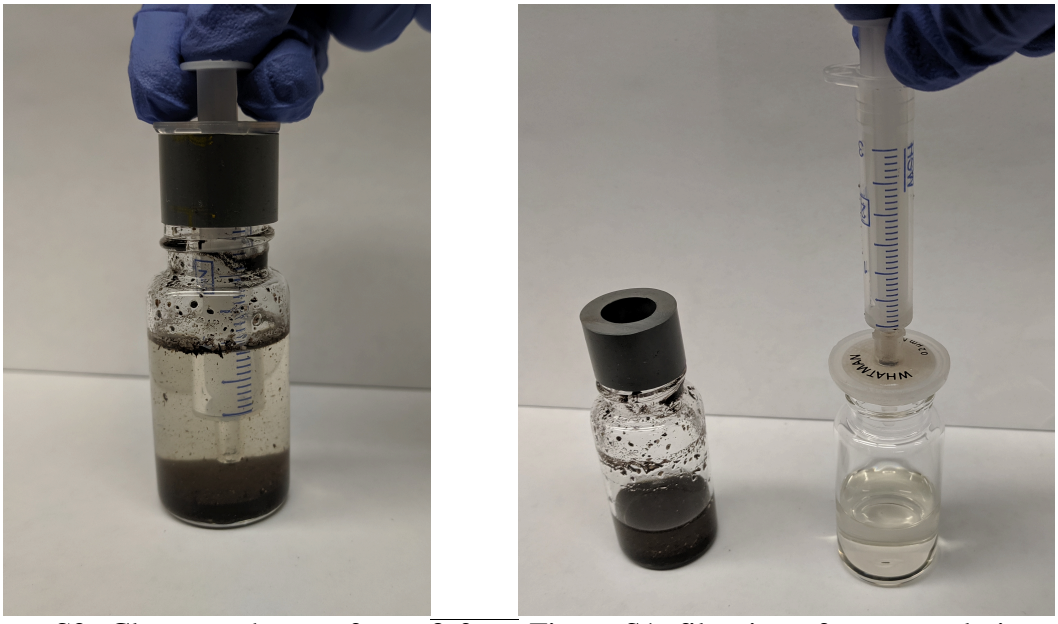

Figure S2: Close-up photos of step 9 from Figure S1: filtration of extract solution with syringe, spacer, and syringe filter into a new clear vial.

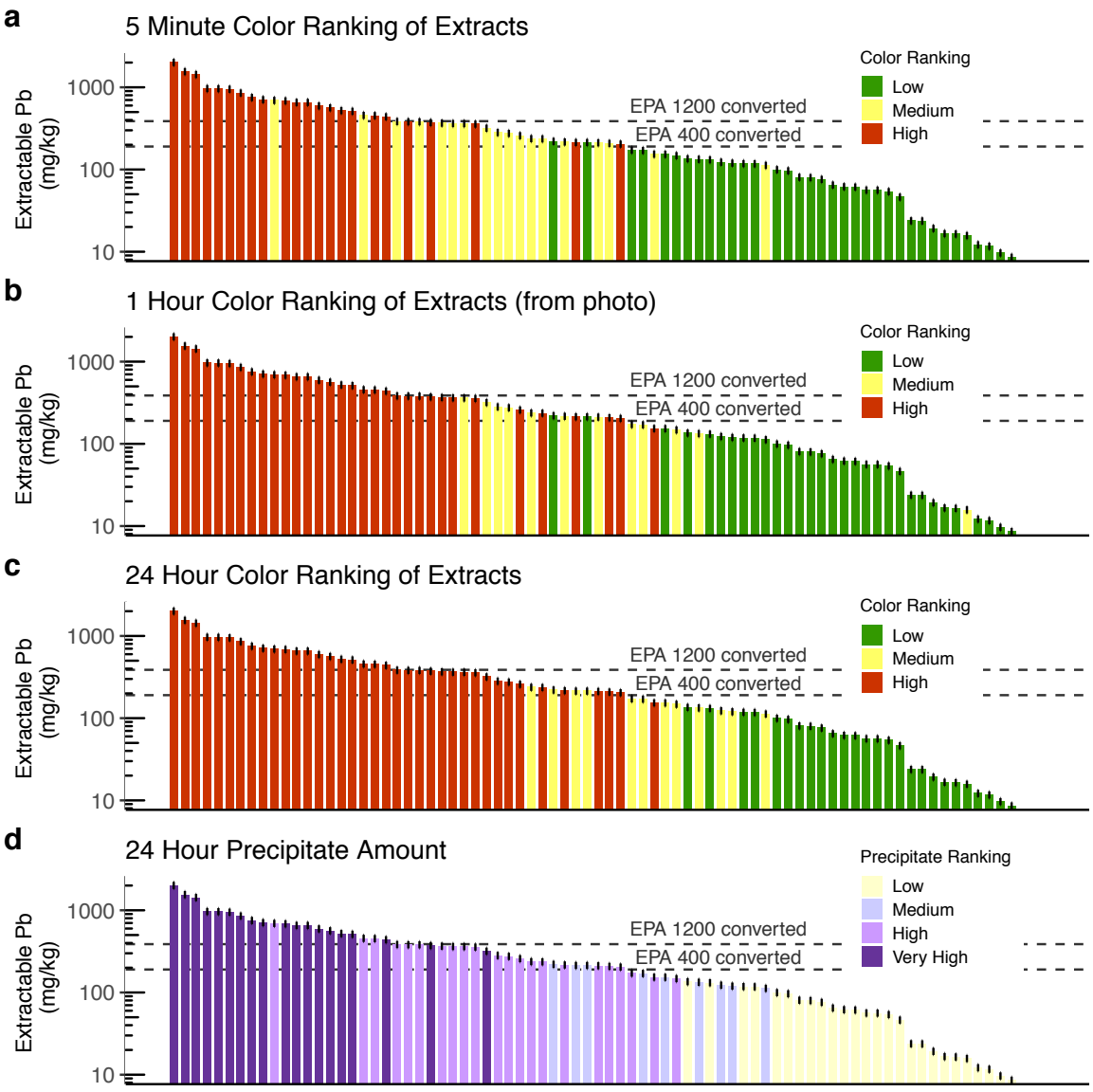

Figure S3: Color ranking of field-procedure extract solutions as determined at (a) 5 minutes, (b) 1 hour, and (c) 24 hours, and (d) the precipitate ranking at 24 hours. Extractable-Pb concentrations were measured by ICP-MS and multiplied by the dilution factor of the soil-to-solution ratio. Color rankings are compared with EPA soil screening levels of total Pb converted to the amount of Pb extracted by the field procedure based on 71.5% IVBA and the equation in Figure 3 (400 → 190 and 1200 → 387 mg/kg Pb).

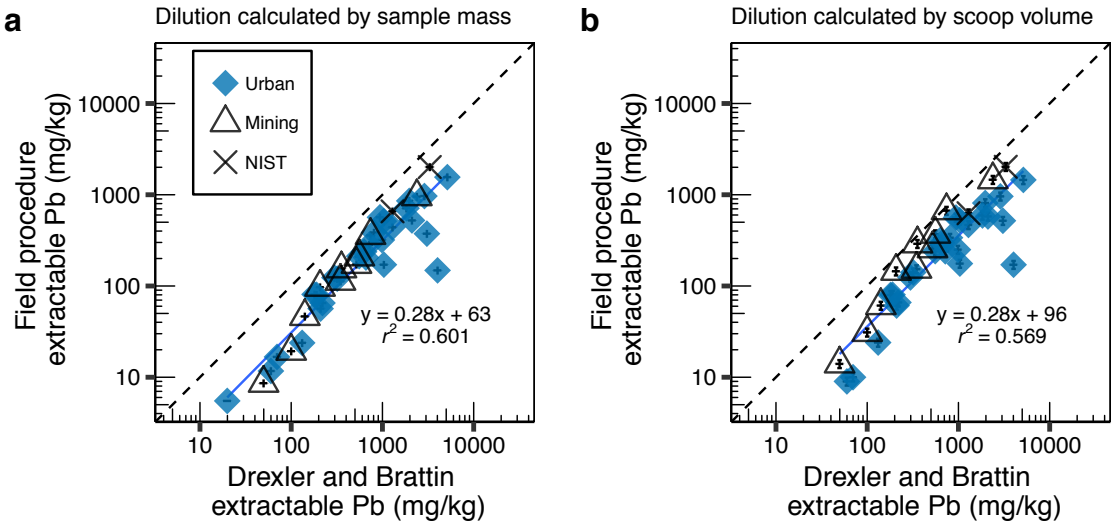

Figure S4: Field-procedure extractable Pb compared with Drexler and Brattin extractable Pb when the field-procedure dilution is calculated by (a) the sample mass of the three scoops, and (b) the sample scoop volume with the assumed mass of 1.5 g. Only samples from 2017 are shown because these samples have both soil mass and scoop data; earlier iterations have soil mass data only. Data in (a) is a subset of samples from Figure 3 but the best-fit line differs because of the reduced sample number and concentration range.

Table S1: Detailed overview of sample contamination type, origin, and field-procedure iteration (e.g. soil-to-solution ratio and year) by figure number.

Contamintion Type	n	Sample origin	n	Soil:solution (year)	n	Fig 2 (n)	Fig 3 (n)	Fig 4 (n)	Fig 5 (n)
Large Secondary Smelter	12	Philippines	4	1:10 (2015)	4	4		4	
		India	8	0.5:5 (2014)	3	3	3	3	
				1:10 (2015)	5			5	
Urban Soil	65	NYC - Backyards	42	1.5:15 (2017)	42	42	15	42	42
		NYC - Parks	20	1.5:15 (2017)	20	20	10	20	20
		NYC - Urban farms	3	1.5:15 (2017)	3	3	2	3	3
Mining Soil	21	Peru - Carretera Central	10	1.5:15 (2017)	10	10	10	10	10
		Peru - Cerro de Pasco	11	1:10 (2015)	10	1		10	
				0.5:5 (2014)	1	6	1	10	
Primary Smelter	10	Peru - La Oroya	10	1:10 (2015)	10	4	1	1	
Battery Recycling	17	Philippines	7	0.5:5 (2014)	4	4	4	4	
				1:10 (2015)	3	3		3	
		India	10	0.5:5 (2014)	2	2	2	2	
				1:10 (2015)	8			8	
E-waste	12	Uruguay	12	0.5:5 (2014)	2	2	2	2	
				1:10 (2015)	10	3		10	
Standards	7	NIST Soil Standards	2	1.5:15 (2017)	2	2	2	2	2
		Blanks	2	1.5:15 (2017)	2	2			2
		Pb-solution	3	1.5:15 (2017)	3	3			
	144		144		144	114	52	139	79